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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,785	03/03/2004	Muneo Mitamura	030673-176	4371

21839 7590 12/20/2005

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EXAMINER

LEE, PATRICK J

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/790,785		MITAMURA ET AL.	
	Examiner		Art Unit	
	Patrick J. Lee		2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

1. This action is in response to amendment filed November 22, 2005.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

A title that accurately describes the most important feature of the claim would be acceptable. The recitation "Rotary Encoder" states nothing as to the critical element of applicant's invention.

Drawings

3. The drawings were received on 11/22/2005. These drawings are acceptable.

Claim Objections

4. Claims 1 & 3 are objected to because of the following informalities:

37 CFR 1.75(i) states:

Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.

With respect to claim 1, the readability of the claim would be drastically improved if the elements (such as the light source, object grating plate, main scale plate, and photodiode grating plate) were separated. It appears that these elements in the preamble do breathe life and vitality to the claim because applicant has argued that there is a patentable distinction from the use of "constant angular intervals" as stated in lines 1-4 of page 11 of applicant's response filed 11/22/2005.

With respect to claim 3, in line 11, "radialley" should read "radially".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 & 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,981,941 to Takata et al in view of US 6,713,756 B2 to Yamamoto et al.

With respect to claims 1 and 3, Takata et al disclose an optical encoding device comprising a light source (201), movable plate (203) as a main scale plate with grating (204) as a substantially fan-shaped scale grating, plate (207) as an object grating plate with grating (208) as a substantially fan-shaped scale grating, and light receiving plate (210) with light receiving area (211) as a photodiode grating plate with a photodiode

photosensitive surface grating (see Takata et al figure 40). However, the teachings of Takata et al do not explicitly disclose the light receiving area being arranged at constant angular intervals. Such is known and disclosed by Yamamoto et al with a plurality of substantially fan-shaped photodiodes (330, 412) located at constant angular intervals in a circumferential direction (see Yamamoto et al figures 38 & 50A). The light receiving areas are arranged at a constant angle pitch on a circumference centering light source (322) (see Yamamoto et al column 41, lines 1-3). Yamamoto et al disclose both the photodiodes (330, 412) and the grating (312) to be arranged with a constant angular separation of $\Delta\phi$ (see Yamamoto et al figure 38). To modify the teachings of Takata et al with those of Yamamoto et al would have been obvious to one of ordinary skill in the art because the modifications would allow the device to have a greater sensitivity to light received by the detection device and also to ascertain a spatial intensity distribution of light received.

Allowable Subject Matter

8. Claims 2 & 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 2 & 4, the modified Takata et al does not disclose nor suggest the scale gratings, object gratings, and the photosensitive surface gratings to be disposed in such a way as claimed so that the external peripheral side of the object

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grating is moved outwardly along the radial line in parallel fashion by a distance twice the first distance.

Response to Arguments

10. Applicant's arguments filed 11/22/2005 have been fully considered but they are not persuasive.

As stated in the discussion of claims 1 & 3 above, the teachings of Yamamoto et al disclose a photodiode grating and a encoder scale with elements disposed at a constant angular interval ($\Delta\phi$) (see Yamamoto et al figure 38 and column 41, lines 1-3).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-

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2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee
Examiner
Art Unit 2878

PJL
December 12, 2005



Stephane B. Allen
Primary Examiner